or floors and emerge in each unit at a wall plate. No party to this proceeding seriously contends that the current point of demarcation is not readily accessible in an exterior, hallway molding or common closet configuration. The sole focus of the debate is the accessibility of the point of demarcation in an internal conduit situation.

As a preliminary matter, it needs to again be stressed that the vast majority of homerun MDU configurations are either of the exterior, common closet or hallway molding category. Time Warner has submitted statistics in the record in MM Docket No. 92-260 which show, for example, that in Manhattan, less than 2 percent of the MDUs are wired with an internal conduit configuration.[17/] There is not one shred of evidence in the record to contradict Time Warner's data. Thus, the Commission should not allow this de minimis exception to swallow the entire rule, particularly given the patent pro-competitive effects of maintaining the current MDU demarcation point.

Even in an internal conduit situation, true internal wiring within the occupant's premises is always readily accessible at the wall plate where the wiring enters the individual unit. Indeed, the Commission could easily "harmonize" its demarcation point rules for single family homes and MDUs by simply establishing the demarcation point in both instances "at or about twelve inches on either side of the point where the wiring enters the customer's premises." Moreover, in many instances involving internal conduit configurations, there is adequate room to fish a second wire through the conduit, thus providing another readily achievable alternative for true facilities-based competition to develop.

[17/] See, Time Warner ex parte submission dated December 5, 1994, at 6.

b. Numerous alternatives exist for competing MVPDs to provide facilities-based competition in MDUs.

In situations where there is not room for two wires in an internal conduit, alternate providers have numerous options for installation of their own wiring, such as an external, hallway, or common closet installation. Because landlords typically receive handsome compensation from unfranchised MVPDs based on a percentage of their revenues from the building, most landlords have a strong incentive to allow another MVPD to install cable in hallway moldings, or on the outside of the building.[18/] Installation of a second wire in common areas of the building is a one-time disturbance to owners of MDUs, rather than something that must be done numerous times. Furthermore, home wiring would not have to be removed and replaced each time a subscriber changes video service providers, because each MVPD would have its own wiring in place, which would be ready to be hooked up to a subscriber's dwelling unit upon request.[19/] The current home wiring rules, by encouraging each provider to install its own independent facilities, allow such service changes without disruption to residents or MDU buildings.

[18/]Unfranchised MVPDs are often in a position to offer such kick-backs to landlords because they are free from many of the financial burdens imposed on franchised cable operators, such as franchise fees, PEG access support obligations, and universal service.

[19/]Congress has stated that, by giving subscribers who terminate cable service the right to acquire the wiring in their dwelling unit, consumers would be able "to utilize the wiring with an alternative multichannel video delivery system and avoid any disruption the removal of such wiring may cause." House Report at 118. Thus, the disruption to subscribers that the home wiring provision sought to avoid was that of having cable operators remove their own wiring upon subscriber termination of service, not that of allowing competing MVPDs to install some of their own wiring for the provision of service which the subscriber has requested. In most cases, the alternative MVPD will be able to incorporate all or some of the existing home wiring, but the home wiring rules provide no guarantee that the alternative MVPD will not have to supplement the existing home wiring on some occasions.

Some commenters in MM Docket No. 92-260, notably Liberty Cable Inc. ("Liberty"), claim that landlords will not allow multiple wires in their buildings due to "aesthetic" concerns or due to potential "disruption" to tenants. Such unfounded claims are flatly contradicted, however, in Liberty's own promotional brochure dated December 30, 1994 and distributed throughout Manhattan:

> We take great care to ensure the transition to Liberty Cable is virtually transparent to your building residents. The entire installation process is non-intrusive and requires minimum construction. Typically, we install a parallel system that coexists with that of your present system.
>
> * * *
>
> [W]e install a vertical wire parallel to that of [Time Warner]. In pre-war structures, this vertical wire is usually enclosed in conduit along the exterior of the building. In post-war buildings, it is often either spliced into the master antenna system or installed in conduit in the stairwells. This new wiring takes just days to install, is invisible to residents and does not interfere with any existing electrical or cable service.[20/]

It should be apparent that these claims of landlord resistance are nothing more than a subterfuge. Telephone companies and competing MVPDs seek to take away a cable operator's internal distribution cable in MDU buildings so that they will not face competition in that building from that cable operator. Just as MDUs have been a fertile environment for the development of video competition to cable operators, it is expected that MDUs will provide an initial frontier for local exchange telephone competition.[21/] The Commission

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[20/] See Exhibit D.

[21/] See, e.g., "MDUs could be 1st telephony target," MultiChannel News, January 9, 1995, at 31.

must not allow telephone companies to crush out this competition by forcing cable operators to cede control over their distribution infrastructure in MDU buildings.

4. Payment of "replacement cost" to the cable operator for MDU distribution wiring is no solution.

Time Warner strongly asserts that it is far beyond the scope of the Commission's regulatory authority, whether under the home wiring provision or otherwise, to force cable operators to relinquish ownership of critical portions of their MDU internal distribution facilities for the benefit of competitors. Nothing in either the 1992 Cable Act or the Telecommunications Act of 1996 gives the Commission the authority to force cable operators to turn over their broadband plant to competitors. In addition, as demonstrated above, such a forced sale would remove the possibility for simultaneous competition among broadband providers, including the franchised cable operator in an MDU, and as such, is contrary to Congress' express intent.

The Commission must therefore not adopt changes that effectively turn over existing MDU wiring installed and owned by incumbent broadband providers, notably cable operators, to broadband competitors simply for the "replacement cost" of such wiring. The true value of this wiring is equal to much more than simply the cost of installing such wiring. In fact, a cable operator's ability to attract capital in order to compete with telcos is keyed to the future revenues which might be derived from such services. Paying "replacement cost" to the cable operator does nothing to compensate for these lost opportunities to compete. Not only would the forced sale of cable distribution facilities impede competition among broadband providers, but such takeover by the cable operator's competitors will also seriously undermine the ability of the franchised cable operator to

provide new services, including video, voice, or data transmissions in the future at such MDU. If a competitor is willing to pay replacement cost, then it should be willing to invest the exact same amount to construct its own facilities, thus providing consumers the benefits of facilities-based competition.

5. Any distinctions in the FCC demarcation point rules should be based on the delivery technology used rather than the services provided.

The NPRM seeks comment on whether any distinctions in the location of the point of demarcation should be based on the distribution technology (i.e., broadband vs. narrowband) rather than the services delivered over any such technology (i.e., cable vs. telephone).[22/] As Time Warner has demonstrated above, facilities-based competition can best be fostered through establishment of the point of demarcation as close as possible to the point where the wiring enters the premises of the end user. This is the case today under the Commission's rules for both telephone and cable wiring in single family homes, as well as broadband cable facilities installed in MDUs. As shall be explained below, it may be impossible, as a practical matter, to change the existing point of demarcation in MDUs for narrowband telephone facilities.

While total "convergence" is by no means certain, Time Warner recognizes that in the future, traditional distinctions between cable operators, telephone companies, and other telecommunications providers may begin to blur. Thus, maintaining separate demarcation points based on the nature of the service, telephone vs. cable, will likewise begin to lack coherency. Accordingly, Time Warner urges that any distinctions in the Commission's

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[22/] NPRM at ¶ 13.

inside wiring rules be based on whether broadband vs. narrowband wiring is deployed, rather than the nature of the services provided.

Time Warner understands that the Commission's "inside wire" rules are contained in Part 68, and thus have historically applied only to telephone wiring. Similarly, the cable home wiring rules are in Part 76, and thus are applicable to cable television operators. However, the Part 68 rules were adopted at a time when telephone service was delivered only by narrowband, copper twisted pair wiring. Similarly, coaxial cable has traditionally been used primarily by cable operators to distribute video signals. As noted above, these service distinctions are breaking down, but distinctions based on the differences between broadband and narrowband technology will continue to be valid. For example, as explained in greater detail in Section V of these comments, all broadband distribution systems which use coaxial cable have the same potential for signal leakage and possible interference with safety and navigation services using radio frequencies. Interference can result regardless of whether the broadband cable is carrying video, voice or data communications. Moreover, the Commission's existing rules properly recognize valid distinctions which are based upon technological factors applicable to network architecture and which exist regardless of the nature of the services transmitted. For example, the Part 68 rules recognize architectural distinctions between "simple" and "complex" inside wiring, and the Part 76 rules recognize distinctions between "loop-through" and "homerun" broadband distribution topology.

Similarly, broadband distribution systems installed in MDUs rely on physical techniques to guard against theft of service. Thus, when a tenant discontinues service, the cable operator opens the lockbox, disconnects the homerun which feeds that tenant's unit, and caps off the signal to prevent leakage. If the point of demarcation were moved to the

lockbox, numerous parties would have the ability to gain access to the lockbox, and the cable operator's ability to prevent theft would be severely compromised. Once the lockbox is no longer secure, the tenant can simply reconnect the homerun cable and begin to steal service. With telephone service provided over narrowband wiring, on the other hand, a customer can be disconnected at the central office switch, without having to physically sever any narrowband wiring leading to that customer's premises.

Another rationale for maintaining the distinction between the broadband and narrowband point of demarcation in MDUs derives from the very nature of broadband vs. narrowband distribution technology. Broadband cables are capable of simultaneous delivery of numerous services, e.g., broadcast television signals, audio signals, premium movie channels, pay-per-view, Internet access and telephone. Thus, as explained in Section II.B.1 of these comments, consumers might well desire access to numerous broadband distributors simultaneously. On the other hand, telephone dialtone, as delivered by narrowband facilities, is essentially fungible. Moreover, even where a customer seeks two telephone lines at the premises, there are typically at least two sets of narrowband twisted pairs pre-wired to each premises, whether single family home or high-rise dwelling unit.

Finally, and perhaps most fundamentally, it may simply not be practicable to change the demarcation point for narrowband wiring in MDUs. As the Commission has recognized, there is no uniform point of demarcation under the current rules for narrowband MDU installations.[23/] Rather, the point or points of demarcation vary from building to building, often reflecting historical anomalies which arose when such wiring was originally installed. Indeed, the Commission grandfathered pre-existing narrowband MDU installations in

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[23/] See NPRM at ¶ 8.

Indeed, the Commission grandfathered pre-existing narrowband MDU installations in recognition of such divergent wiring techniques.[24/] Thus, while moving the narrowband demarcation point to each individual unit in an MDU may be preferable from the standpoint of encouraging facilities-based competition, such an approach may not be economically feasible given the pervasive embedded base of installed narrowband wiring.

Broadband facilities, on the other hand, have generally been installed by cable operators in MDUs to take into account the existing demarcation point. Even as telephone competition emerges, it is highly unlikely that any new entrant will be motivated to install a second set of narrowband facilities in an MDU. Rather, given the tremendous advantages of broadband plant in terms of service capacity, any entrants, including incumbent LECs, are likely to deploy broadband facilities. Thus, by maintaining the point of demarcation for broadband installations in MDUs at the premises of each unit, the Commission will be promoting end-to-end, facilities-based competition, as intended by Congress, and an end-user demarcation point will develop through natural marketplace evolution.

Accordingly, for the reasons set forth above, any Commission's rules relating to the technical aspects of wire-based distribution technology, such as the point of demarcation or signal leakage rules, should be based solely on whether broadband or narrowband wiring is deployed, and should apply equally to all service providers, regardless of the nature of the services which may be transported. As Time Warner has indicated above, it is premature to predict whether "convergence" of telephone and cable service will occur, or if so what form

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[24/]See 47 C.F.R. § 68.8; Review of Sections 68.104 and 68.213 of the Commission's Rules Concerning Connection of Simple Inside Wiring to the Telephone Network, Report and Order and Further Notice of Proposed Rulemaking, 67 RR 2d 1281, 1289-1291 (1990).

it might take. However, it is beyond dispute that narrowband, copper twisted-pair telephone lines are now being used to offer more than just "plain old telephone service," and broadband coaxial cable and fiber optic facilities are being used to deliver much more than traditional one-way cable television video programming services. Thus, Time Warner urges that any distinctions in the Commission's point of demarcation rules be based on the nature of the technology (narrowband vs. broadband), rather than the nature of the service (voice vs. video/voice/data) provided by such narrowband or broadband facilities. In this way, the Commission's rules will incorporate the inherent flexibility necessary to allow the pace of "convergence" to be dictated by the marketplace.

III. ACCESS TO CABLE INSIDE WIRING BY CONSUMERS

A. Congress has mandated the Commission not to force cable operators to cede control over inside broadband wiring prior to termination of service.

The Commission seeks comment on whether consumers should be granted access to broadband inside wiring prior to termination of cable television service, and on a number of more specific issues related thereto.[25/] In brief, the Commission should not expand its home wiring rules to apply prior to subscriber termination of service because to do so would, inter alia, contradict the plain language of the home wiring statute and result in an unconstitutional taking of the cable operator's property.

The plain language of the home wiring provision expressly states that

> the Commission shall prescribe rules concerning the disposition, after a subscriber to a cable system terminates service, of any

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[25/] NPRM at ¶¶ 42-48.

> cable installed by the cable operator within the premises of such subscriber.[26/]

Similarly, the legislative history of the 1992 Cable Act states that

> The Committee believes that subscribers who terminate service should have the right to acquire wiring that has been installed by the cable operator in their dwelling unit.
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> * * *
>
> This section does not address matters concerning the cable facilities inside the subscriber's home prior to termination of service.[27/]

Moreover, the home wiring provision

> addresses the issue of what happens to the cable wiring inside a home when a subscriber terminates cable service.[28/]

Thus, Congress' intent with regard to when the home wiring rules are to apply could not be more clear. The Commission has, heretofore, adhered to the plain language of the home wiring provision,[29/] and should continue to do so.

Not only is application of the home wiring rules prior to termination of cable service beyond the scope of the Commission's jurisdiction, but such rules would introduce a host of other problems as well. First, rules that would force a cable operator to yield ownership of all or part of its home wiring while it is still providing cable service over that wiring, or before it has even begun to provide cable service, would raise serious fifth amendment taking

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[26/]47 U.S.C. § 544(i) (emphasis added).

[27/]House Report at 118.

[28/]S. Rep. No. 92, 102d Cong., 1st Sess. 23 (1991) ("Senate Report").

[29/]See Report and Order in MM Docket 92-260, 8 FCC Rcd 1435, ¶ 5 (1993) ("We do not think it is necessary or appropriate under the [home wiring] statute to apply [the home wiring rules] before the point of termination.").

concerns. Cable home wiring is presumed to be the personal property of the cable operator unless or until the cable operator yields its ownership of such wiring by agreement.[30/] Home wiring rules that would force the cable operator to cede ownership of any portion of its wiring without just compensation must not be enacted. Congress simply gave no authority to the Commission to establish rules that result in an unconstitutional taking without payment of just compensation, nor does the Act allow home wiring to be taken from the cable operator by the subscriber prior to termination of service, even with compensation to the operator.[31/] Accordingly, the home wiring rules that were enacted in 1993 apply only upon subscriber termination of cable service, and their application should not now be expanded to cover the disposition of home wiring at any time prior to termination of service.

Additionally, responsibility for the maintenance and control of signal leakage and signal strength and quality that currently lies with the cable operator pursuant to statute[32/] would have to be reassigned if subscribers were to obtain access to home wiring prior to

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[30/]See Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419 (1982). Indeed, Loretto hinges on the very premise that the cable wiring remains the personalty of the cable operator after installation. If the cable wiring had become the property of the subscriber or the building owner upon installation, there would have been no taking; rather, the cable wiring would have been a gift from the cable operator to the subscriber or building owner. However, the Supreme Court in Loretto held that the physical occupation of the apartment building by the cable wire constitutes a taking, for which the cable operator must pay just compensation. Id. at 441. Thus, the cable wiring was still clearly the property of the cable operator after it was installed.

[31/]The Commission cannot remedy the unconstitutionality of the taking by implementing a rule setting forth a compensation calculation; rather, compensation must be determined in an adjudicatory proceeding. See Florida Power Corp. v. FCC, 772 F.2d 1537, 1546 (11th Cir. 1985), rev'd on other grounds, 480 U.S. 245 (determination of just compensation is clearly a judicial function, and any rule purporting to set compensation is itself unconstitutional).

[32/]See, e.g., 47 C.F.R. §§ 76.605, 76.611.

termination of service. Congress did not intend to hinder a cable operator's ability to carry out its statutorily mandated responsibilities, nor did it intend that the Commission enact far-reaching rules that reallocate responsibility for signal leakage, strength and quality. In fact, Congress expressly stated that

> [n]othing in this [home wiring] section should be construed to create any right of a subscriber to inside wiring that would frustrate the cable operator's ability to prevent or protect against signal leakage during the period the cable operator is providing service to such subscriber.[33/]

If the home wiring rules were to be amended such that the cable operator no longer maintains control of wiring over which it is still providing service, the cable operator will necessarily lose the ability to fulfill its duty to prevent signal leakage, and it can no longer remain responsible for poor signal strength and quality, or other maintenance of such internal wiring. Thus, if the home wiring rules were amended to apply prior to subscriber termination of cable service, the Commission would be acting in contravention of Congress' intent, and it would have to enact further rules regarding signal quality and strength to reflect the changes in the home wiring rules.

B. The Commission could create incentives for cable operators to turn over control of internal wiring to consumers upon installation.

If the Commission decides that a policy goal should be to shift responsibility for and control over cable inside wiring from cable operators to consumers, the best approach is to create incentives for cable operators to voluntarily turn over control of such wiring to consumers upon installation. Currently, as discussed supra, cable operators are legally entitled to retain ownership over such wiring. In addition, this cable wiring is subject to

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[33/]House Report at 119.

numerous regulations, including the price regulation of inside wire installation and maintenance, as well as the technical regulation of inside wiring signal quality and leakage. If the Commission desires for inside wiring to be under the control of consumers, the best way to effectuate such a policy would be to relax the aforementioned regulations should the cable operator choose to voluntarily turn over control of the wiring upon installation. Creating such incentives for cable operators to voluntarily turn over inside wiring would neither violate the provisions of the 1992 Cable Act nor constitute a unconstitutional "taking."[34/]

Thus, upon installation, a cable operator should be given a choice regarding wiring installed within the end-user's premises. If a cable operator retains control and ownership of the inside wiring, prices for installation and maintenance should remain regulated as they currently are, and cable operators should be required to deliver a quantity of signal, with minimal signal leakage, directly to the set as required under the current rules. On the other hand, if the cable operator chooses to cede control over the wiring to the subscriber immediately upon installation, maintenance and installation price regulation should be eliminated, and signal quality and leakage standards should only be enforced up to the demarcation point. Under this latter approach, the consumer would be clearly advised of the right to obtain the installation and maintenance of inside wiring from unrelated third parties, just as telephone inside wiring installation and maintenance is open to such competition. As discussed in greater detail in Section VI of these comments, such a result would not only

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[34/] Another mechanism to achieve this goal on a voluntary basis is through the negotiation of "social contracts," as Time Warner has entered into with the Commission. See Social Contract for Time Warner, ___ FCC Rcd ___, FCC 95-478 (released November 30, 1995) at Appendix B, Sec. III.H.2.

foster a new competitive installation and maintenance market, but also would eliminate the need to regulate the prices of inside wiring installation and maintenance.

IV. TECHNICAL STANDARDS FOR BROADBAND CONNECTIONS

The Commission has requested comment on whether it should adopt standards for interface jacks used to connect consumer electronics equipment with cable television systems and other broadband systems. The Commission postulates that uniform standards for broadband connections could ensure network integrity; decrease the frequency of incorrect connection by alternative providers, thus decreasing concern over signal leakage and substandard signal quality; and simplify the use of existing wire connections by alternative service providers, thereby facilitating competition.[35/] The Commission notes that the use of F-connectors is already prevalent within the cable television industry and questions whether regulatory oversight of this area could limit flexibility of service providers to respond to technical improvements in standard jacks and connectors.[36/]

The Commission should refrain from adopting standards applicable to jacks and connectors for several reasons. The presence of a de facto standard within the cable television industry specifically, and the video consumer electronics industry generally, speaks eloquently to the absence of any need for government intervention in this area. Furthermore, the adoption of such standards is unlikely to substantially further the goals which the Commission cites as justifying the need for standards. To the contrary, as discussed below,

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[35/]NPRM at ¶ 29.

[36/]Id.

the adoption of standards could stifle technological innovations and equipment improvements to the detriment of the public.

Initially, one must question the need for new regulations governing cable connectors. Nothing in either the 1992 Cable Act or the Telecommunications Act of 1996 directs the Commission to adopt such standards. Rather, both statutes express a clear preference for marketplace solutions over regulatory fiat.[37/] Given the complete absence of any record to indicate the existence of a problem which the marketplace has not functioned adequately to solve, the Commission bears a heavy burden to justify any regulatory initiative in this area.

The Commission itself has recognized that involvement with respect to standards setting may not be necessary in light of the fact that a de facto standard has already been established in the marketplace for cable connectors. The Commission is absolutely correct in this regard.[38/] Not only the cable television industry, but other multichannel video providers that connect their service to consumer electronic equipment using coaxial cable utilize the standard F-type connector which can be purchased at virtually any hardware store or consumer electronics retail outlet. Likewise, manufacturers of consumer electronics

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[37/]See, e.g., Telecommunications Act of 1996 at Sec. 301(f)(1) wherein Congress found that "compatibility among televisions, video cassette recorders, and cable systems can be assured with narrow technical standards that mandate a minimum degree of common design and operation, leaving all features, functions, protocols, and other product and service options for selection through open competition in the market."

[38/]The Society of Cable Telecommunications Engineers has adopted standards covering both male and female F-type connectors which are in the process of becoming ANSI approved and which have been followed by almost all manufacturers of cable television equipment. See, e.g., IPS-SP-401 (Adopted) Recommended "F" Plug (Feed Thru, Male); IPS-PS-402 (Preliminary) Recommended "F" Push-On (Feed Thru, Male); IPS-SP-403 (Preliminary) Recommended "F" Connector to Cable Interface; IPS-SP-404 (Preliminary) Indoor F-Connection Installation and Performance; and IPS-SP-600 (Preliminary) Recommended "Trap F" Male Connector.

equipment have increasingly included receptacles for F-type connectors in their products, thus allowing direct connection to coaxial cable without the need for an adapter or other device. Today, virtually all newly manufactured televisions and videocassette recorders accommodate F-type connectors. Even in cases where older models of electronics equipment do not directly accommodate F-connectors, inexpensive matching transformers are readily available that will allow the service provided over coaxial cable to utilize the inputs which many older TV sets furnish to accommodate flat wire antenna twin leads. These devices are likewise available at low cost at hardware stores and consumer electronics retail outlets.

The prevalence of the F-type connector and the ubiquity and low cost of such connectors from retail vendors clearly indicates that the marketplace has functioned appropriately without the need for government intervention. Given that the FCC has established no record whatsoever to indicate that there are any problems with the functioning of the marketplace, one must question the need for and wisdom of attempting to micromanage the industries involved in the delivery of video programming through the imposition of unneeded standards.

The three concerns raised by the FCC to justify the standardization of cable connectors are unlikely to be furthered by such regulations and could better be achieved through other means.[39/] The first concern raised by the FCC is to ensure network integrity. However, standardization of cable connectors will do little to accomplish this goal. Video service providers, especially cable operators who are subject to extensive signal leakage and signal quality regulations, already utilize high quality, readily available

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[39/]NPRM at ¶ 29.

connectors on their networks. The adoption of regulations standardizing such connectors will do little, if anything, to further improve network integrity. Furthermore, Time Warner's experience has shown that the largest threat to network integrity, signal ingress, is most often caused by additional outlets that have been incorrectly installed by the subscriber beyond the network demarcation point established by the Commission. Setting standards for connectors will do little to protect network integrity in cases where improper installation procedures are followed.

The second concern raised by the Commission, the possibility of signal leakage and substandard signal quality caused by incorrect connection by alternative service providers, would also be largely unaffected by the imposition of connector standards. In cases where alternative service providers have caused signal leakage by connecting to a dwelling previously served by an incumbent cable operator or other MVPD, it is almost invariably the case that the cause for the leakage is the alternative service provider's unauthorized tampering with the incumbent operator's lines and its failure to cap-off those lines when disconnecting them from the dwelling unit which the alternative service provider is seeking to serve. A far more effective way to prevent unwanted signal leakage would result if the Commission made its signal leakage and signal quality rules applicable to all broadband service providers and prevented alternative service providers from disconnecting the service of the incumbent provider without proper authorization from the existing service provider.

The third justification advanced by the Commission, the facilitation of competition, is similarly unfounded. Regulatory barriers, not the absence of connector standards, have been the major impediment to the development of full and free competition in the provision of communications services. Given the fact that the current F-type connectors are almost

universally employed to provide broadband video services, the adoption of standards will have no real impact on facilitating competition.

As a practical matter, the quality of the existing internal wiring, and not than the type of connector used, is far more likely to be the limiting factor preventing an alternative provider from serving a particular household without having to rewire that household. For example, the use of ever increasing bandwidth has made internal wiring using RG-59 cable obsolete in many cases, since such wiring may not be suitable for passing large amounts of bandwidth while maintaining leakage integrity and signal quality.

The use of inferior or improperly installed internal wiring can be expected to become even more of a problem in the future under the Commission's rules allowing subscribers to install and replace their own wiring without the need for intervention by the cable operator. Indeed, since cable operators have been prevented from charging a monthly fee for service to additional outlets, it has become increasingly common for subscribers, on their own, to wire a multiplicity of additional outlets utilizing equipment bought at the local consumer electronics or hardware store. In a competitive world with rapidly changing technology, it is very possible that such wiring may not be able to accommodate the many new services and ever increasing bandwidth that will be provided by competing multichannel video program distributors. Invariably, such wiring may have to be replaced regardless of the type of connectors utilized.

As a final matter, the Commission's concern that standardization could stifle experimentation and product development is a valid one. The absence of rigid standards has allowed consumer electronics equipment manufacturers to innovate and respond to marketplace demands. As a result, current products have been designed to allow multiple

input options, thereby allowing the consumer to customize the set-up of consumer electronics equipment based upon each individual's particular needs and preferences. The rapid pace of technological change and the potential plethora of newly emerging services to be provided over broadband systems in the future strongly suggest that flexibility is even more important now than in the past. Innovative designs, such as fiber to the home, may never develop if standards are mandated prematurely. Given that a new era in local telecommunication services competition is dawning, consumers stand to lose much more than they have to gain as a result of premature connector standardization. At such time as standards are needed, consumers will be better served by standards developed by the affected industries themselves than by standards imposed by governmental authorities.

V. SIGNAL LEAKAGE AND SIGNAL QUALITY

In its NPRM, the Commission has questioned whether all broadband video service providers should be made subject to the same signal leakage and signal quality rules that are applicable to cable television systems.[40/] For the reasons set forth below, Time Warner urges the Commission to make its signal leakage rules applicable to all broadband service providers that utilize frequencies in the aeronautical and public safety bands where the existence of signal leakage could pose a threat to public health and safety, which is clearly a vital FCC function.[41/] Furthermore, while a competitive marketplace in the provision of

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[40/]NPRM at ¶¶ 24-26.

[41/]The authority of the Commission to apply its signal leakage rules to all MVPDs, including so-called "private cable" or SMATV systems, is evident, inter alia, from Section 1 of the Communications Act, which states that one of the fundamental purposes for which Congress established the Commission was to promote "safety of life and property through the use of wire and radio communication." 47 U.S.C. § 151.

video services may well render unnecessary the Commission's signal quality rules, the Commission should ensure that while those rules remain in force, they are applied equally to all broadband video service providers.

The Commission's rules governing the use of frequencies in the aeronautical frequency bands and the prevention of signal leakage that could cause harmful interference with those critical frequencies were first implemented nearly two decades ago.[42/] In order to protect critical over-the-air communications involving public safety from harmful interference, the Commission adopted a comprehensive scheme that required cable operators to seek and obtain prior approval from the FCC before operating on any frequencies in the 108 to 136 MHz and 225 to 400 MHz bands which are shared with aeronautical communications and navigation services. The rules also prevented cable operators from operating on any frequencies within 100 kHz of the emergency frequency 121.5 MHz or within 50 kHz of the emergency frequencies 156.8 MHz and 243 MHz. The Commission actively polices and enforces these rules through a vigorous program of field inspections and the imposition of forfeitures. The Commission has correctly characterized the safety of life and property as crucial regulatory objectives which must be strictly enforced.[43/]

Adoption and enforcement of its initial regulatory program represented only a significant first step to ensure that broadband distribution systems do not pose a threat to emergency communications, air traffic and public safety. The Commission also commenced a study to determine how the public could be assured that harmful interference to

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[42/]Report and Order in Docket No. 21006, 65 FCC 2d 813 (1977).

[43/]See Memorandum Opinion and Order re: Oxnard Cablevision (Mimeo No. 20594) (released August 24, 1979).

aeronautical and marine emergency radio services would not occur from cable television operations. To this end, the Commission chartered an advisory committee to conduct a study, evaluate the results and offer a report to recommend a new regulatory approach to govern the use of critical safety frequencies by cable television systems.

In 1984, based upon the work of this advisory committee, the Commission substantially revised its regulatory scheme to require cable operators to: 1) comply with new mandatory frequency offsets; 2) develop and implement a comprehensive signal leakage monitoring program on an ongoing basis; and 3) calculate and file with the Commission an annual cumulative leakage index for each of their cable systems. The Commission justified this revised regulatory scheme based on a number of instances where signal leakage from cable systems was shown to have the potential for interference with aeronautical communications.[44/]

The Commission's rules governing signal leakage and operation in certain restricted frequency bands apply only to cable television systems simply because at the time they were adopted there were no other pervasive providers of broadband communications services which posed the same risk of interfering with air traffic and emergency services. Wireless cable services (i.e., MMDS) are rapidly becoming even more serious competitors to franchised cable operators, largely due to the removal of regulatory impediments and massive infusions of capital, inter alia, from incumbent telcos. Until recently, telephone companies have been largely prevented from offering the type of video services that require the construction of broadband facilities. Other wire-based competitors, such as SMATV

[44/] Second Report and Order in Docket No. 21006, 57 RR 2d 144 (November 9, 1984).

operators, were generally limited by regulatory requirements to serving geographically limited areas comprised almost exclusively of commonly-owned multiple dwelling units. Even though SMATV systems utilized broadband facilities operating in the restricted frequency bands, the Commission has in the past declined to extend the rules applicable to cable systems' use of such frequencies to cover SMATV operations, finding such actions to be outside the scope of the concerns which were before it at the time.[45/]

The new regulatory climate which will foster competition in broadband services requires the Commission to reexamine its regulatory policy and to expand its signal leakage rules to make them applicable to all broadband service providers equally. It is Time Warner's experience that broadband distribution facilities installed in MDU buildings, whether by SMATV operators, MMDS companies or franchised cable operators, can be a significant source of signal leakage. Leakage is leakage whether it comes from a franchised cable system, an SMATV facility, an MMDS internal MDU distribution facility or a video dialtone facility. Regardless of the type of facility causing a leak, the threat to public safety and air navigation remains the same.

Time Warner has experienced numerous instances where an SMATV operator seeking to serve an MDU already served by Time Warner has illegally broken into Time Warner's lockboxes. Cables have been randomly disconnected, interfering with the provision of service to occupants desiring to continue to receive service from Time Warner. Identification tags have been maliciously removed from cables, making it extremely difficult

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[45/]See In the Matter of Amendment of Part 94 of the Commission's Rules to Permit Private Video Distribution of Video Entertainment Access to the 18 GHz Band, Report and Order, 6 FCC Rcd 1270, 1272 (1991); In the Matter of Definition of a Cable Television Service, Report and Order, 5 FCC Rcd 7638, 7642 (1990).

for Time Warner to determine which cables serve which units. Lockboxes are left open, facilitating theft of cable service. Most importantly, intrusion into Time Warner's lockbox has resulted in disconnected cables which are not properly capped-off and home run drops which are not properly secured, both of which have substantially increased the risk of signal leakage which could interfere with safety-of-life radio frequencies.[46/]

In the future, it will become increasingly likely that potentially harmful signal leakage will emanate from broadband service providers other than franchised cable systems. Even prior to passage of the Telecommunications Act of 1996, the FCC took a number of actions designed to foster the development of competitive alternatives to traditional cable television service, such as the relaxation of frequency restrictions in the private operational fixed microwave service, the relaxation of certain rules which facilitate aggregation by wireless operators of large blocks of channels, and the issuance of authorizations to provide video dialtone service. Passage of the Telecommunications Act of 1996 will only accelerate this trend.

Under the Telecommunications Act of 1996, telephone companies are provided with a number of options allowing them to provide broadband services, including video programming services, within their local telephone service areas.[47/] Under some of those alternatives, these telephone companies might escape signal leakage and frequency use

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[46/]See ex parte letter from Time Warner New York City Cable Group in MM Docket 92-260, dated January 27, 1995. Any change in the point of demarcation in MDU buildings would only exacerbate these problems.

[47/]See Telecommunications Act of 1996 at § 302.

restrictions applicable to cable systems.[48/] Furthermore, many facilities, both wire-based and wireless, which are presently considered cable systems under the Communications Act and FCC rules will no longer be subject to regulation as cable systems by virtue of Section 301(a) of the new legislation exempting all facilities located entirely on private property from the cable system definition. Unregulated SMATV and MMDS facilities will now be expanded to include many planned unit developments, trailer parks, mobile home parks and clusters of non-commonly owned high rise apartments which do not occupy public rights-of-way, but which have traditionally been considered cable systems, and thus subject to the strict signal leakage rules in Part 76. Indeed, in some cases, the size and geographic reach of the newly reclassified broadband systems will be larger and serve more subscribers than some of the smaller traditional cable systems currently in operation. Accordingly, it is absolutely critical that the Commission's aeronautical frequency and signal leakage rules apply across the board to all broadband facilities that utilize critical public safety communications and navigation frequencies. It is not the nature of the service provided, but rather the portion of the spectrum being used, which creates the possibility for leakage and the concomitant threat to public safety.

The legislative history accompanying the cable home wiring provision of the 1992 Cable Act directs the Commission to be particularly attentive to signal leakage concerns in crafting home wiring rules:

> Cable operators continue to have legal responsibility to prevent signal leakage, since improper installation or maintenance could threaten safety services that

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[48/]For example, it is unclear whether the Commission's signal leakage rules applicable to cable systems would also be applicable to broadband systems operating as common carriers under Title II of the Communications Act.

> operate on critical frequencies. Nothing in this Section should be construed to create any right of a subscriber to inside wiring that would frustrate the cable operator's ability to prevent or protect against signal leakage . . . .[49/]

Clearly, Congress recognized that an increasingly competitive environment requires increasing vigilance and regulatory action by the Commission to protect and ensure the integrity of public safety communications.

In expanding the scope of its rules to cover all broadband service providers, the Commission may need to make some revisions to its signal leakage monitoring procedures to take into account the possibility that several operators may serve the same or overlapping geographic areas. With several providers operating on the same frequencies, standard flyover or ground-based measurement techniques, although adequate to detect the presence of leakage, may not be able to pinpoint the source of a particular leak. It might be helpful to require each service provider to use a unique carrier frequency to help assign responsibility for any particular leak. Furthermore, service providers should be required to inform their competitors of leaks found in the competitor's plant so that those leaks can be promptly repaired and eliminated. Obviously, this not only will help alleviate the threat to public safety communications resulting directly from the leakage, but would also reduce the possibility that cumulative leaks in the plant of one service provider could be masking and preventing detection of leaks in the plant of a co-located service provider.

Unlike concerns about signal leakage, no public safety objectives are directly implicated by the imposition of signal quality standards on broadband service providers. Time Warner agrees with the Commission, as suggested in the NPRM, that the existence of

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[49/]House Report at 119.